

# NOAA Science Update to the Science Advisory Board

Craig McLean

Acting Chief Scientist

April 24, 2017



# Climate Adaptation and Mitigation Update



# 2016 State of the Climate Report

## U.S. Selected Significant Climate Anomalies and Events for 2016



AK had its 2<sup>nd</sup> warmest winter, warmest spring, 2<sup>nd</sup> warmest summer and a warmer-than-average fall, culminating in its warmest year on record.



The CONUS had its 2<sup>nd</sup> warmest year on record. Every state was warmer than average. Precipitation was above average for the year.



Based on data that go back to 2000, the 65,575 fires in 2016 were the sixth fewest on record and burned more than 5.4 million acres, seventh fewest.



Persistent storm tracks led to the wettest year on record for the Upper Midwest. It was the 2<sup>nd</sup> wettest year on record for MN and WI.



Drought was persistent in the Northeast during the summer and fall. At its peak in November, it covered 56% of the region.



In January, a powerful winter storm set new snowfall records in several cities in the Mid-Atlantic and was the 4<sup>th</sup> most intense storm based on the NESIS scale.



Above-normal annual precipitation in the West contributed to the regional drought footprint being reduced from 45% at the beginning of the year to 22% at the end.



During the fall, several locations had no precipitation for 50 or more days, leading to extreme and exceptional drought which covered 36% of the Southeast at its peak.



Separate heavy rain events in the spring and summer caused catastrophic and historic flooding in LA, TX and WV.



Hurricane Matthew was the first Atlantic Category 5 hurricane since Felix in 2007. It made landfall in October as a Category 1 hurricane near Myrtle Beach, SC and caused widespread coastal and inland flooding in the Carolinas.



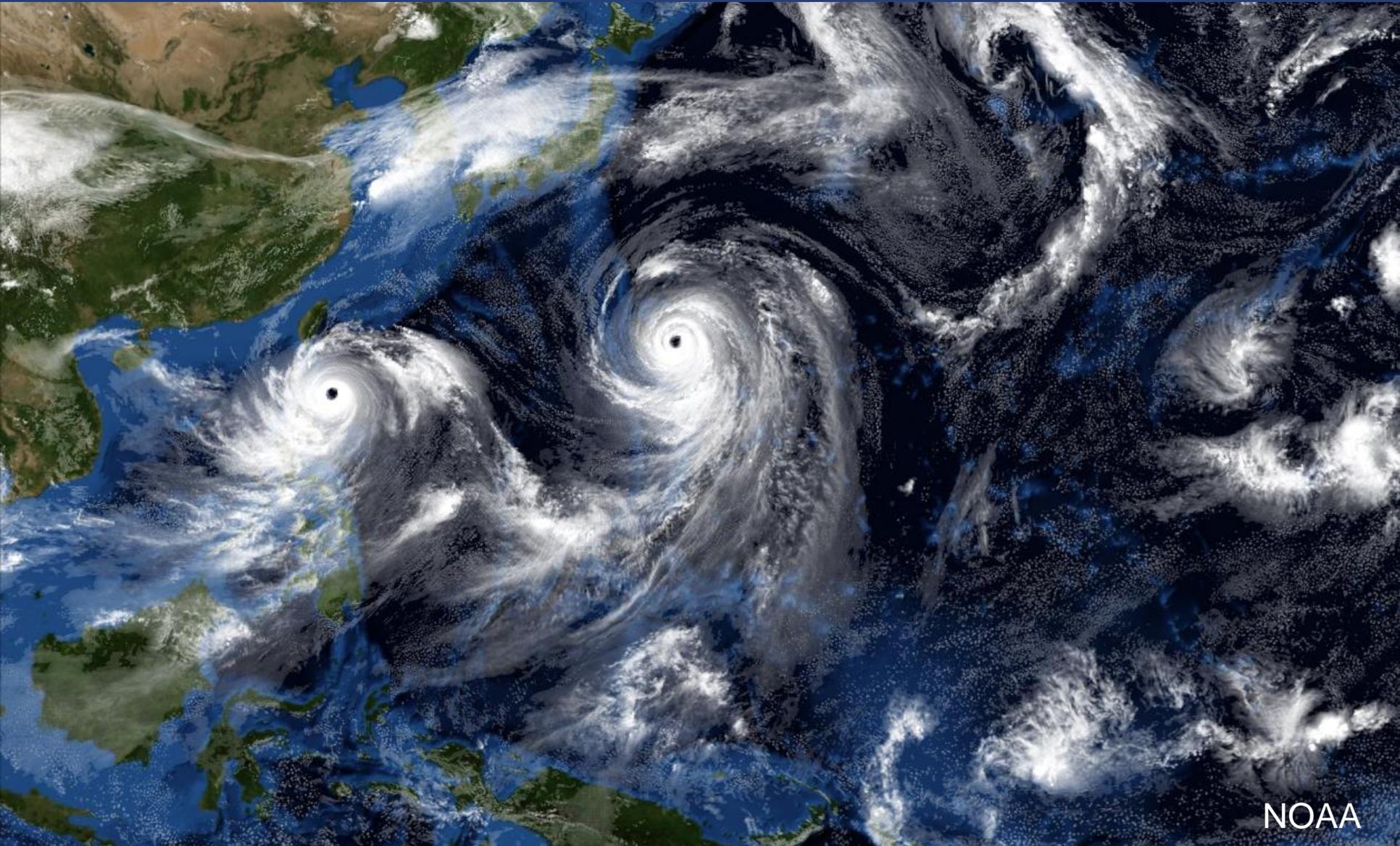
Darby became the 2<sup>nd</sup> tropical cyclone in 3 years to make landfall in HI—only the fifth landfalling cyclone since records began in 1949.



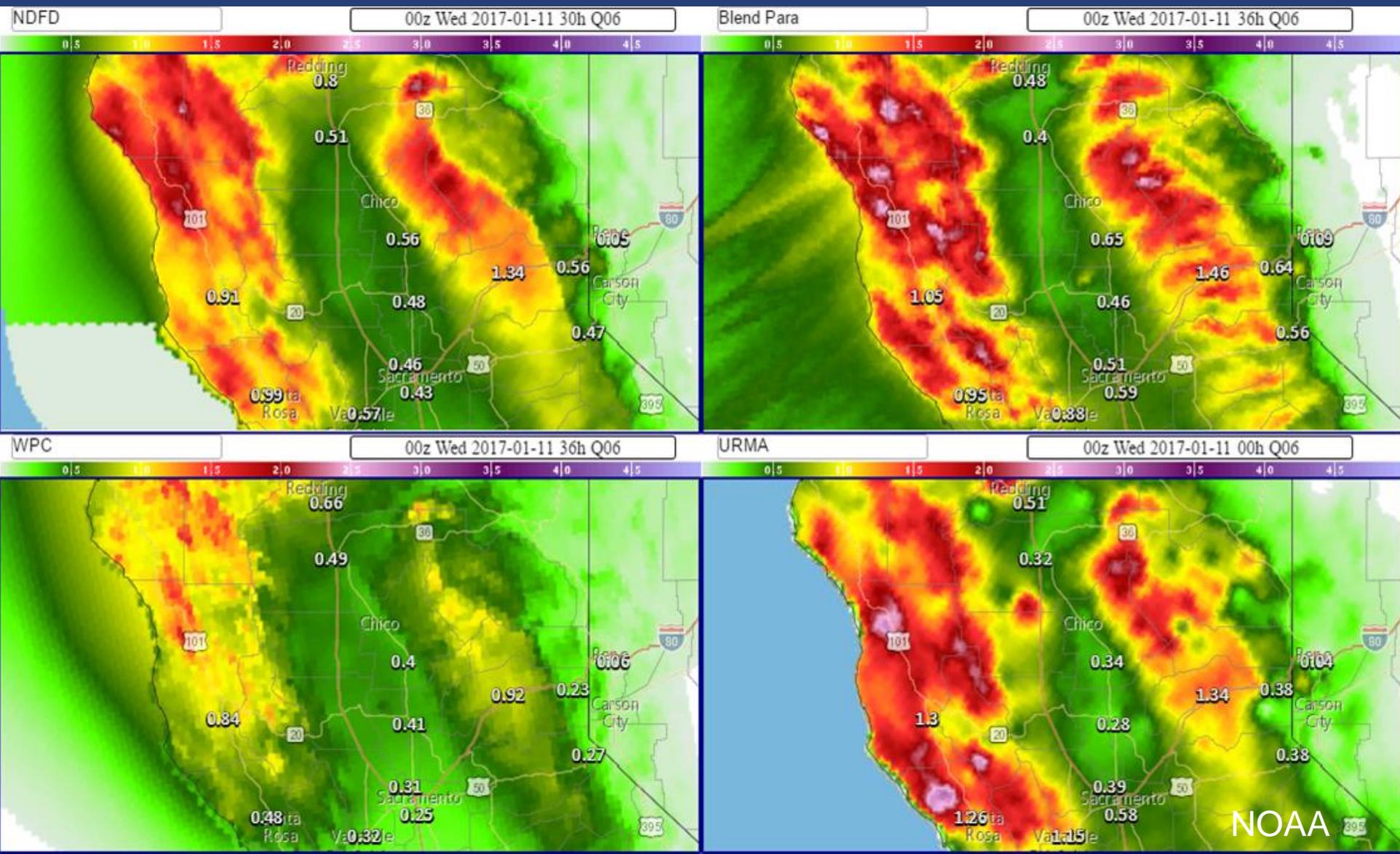
**Weather Ready  
Nation  
Update**



# FV3 Update



# National Blend of Models



# Warn on Forecast in Hazardous Weather Test Bed



# WRN Ambassadors – 5,000<sup>th</sup> Partner



# Healthy Oceans Update



# Aquaculture



# Social Vulnerability Indicators could help U.S. Fishing Communities



# First Deep Bottomfish Fishery-Independent Survey Goes Operational



NOAA



NOAA



NOAA

# The Economist Films: The Deep

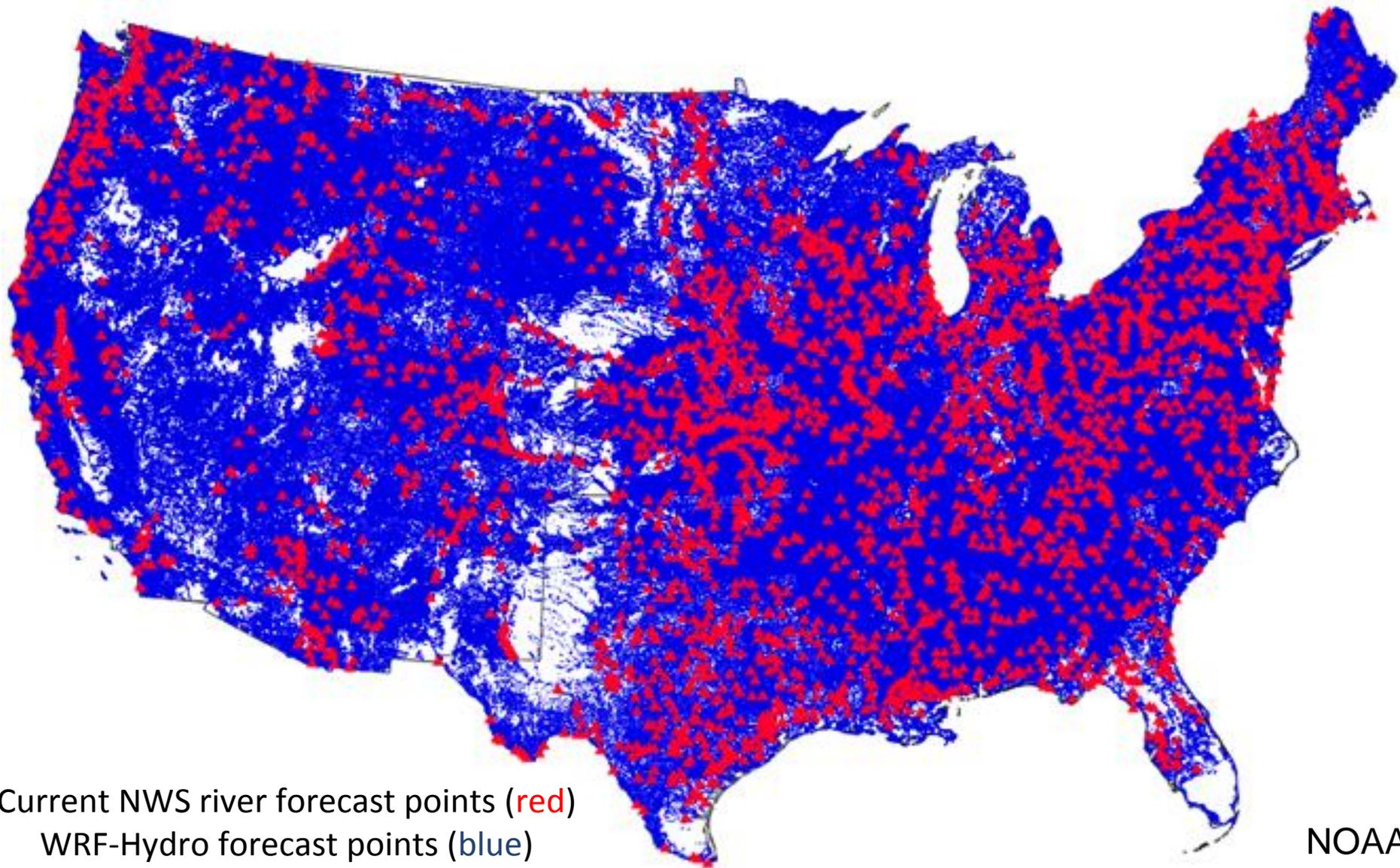
A dark underwater scene with a blue light source illuminating a fish. The light creates a beam that highlights the fish's form against the deep black water. The overall atmosphere is mysterious and somber.

THE DEEP

**Resilient  
Coastal  
Communities  
and  
Economies  
Update**



# National Water Model Improvements



Current NWS river forecast points (red)

WRF-Hydro forecast points (blue)

# GRAV-D Flights



# Organizational Excellence

# In the Spotlight: PECASE Winners



**Dr. Mandy  
Karnauskas** (NMFS,  
Southeast Fisheries  
Science Center)



**Dr. Anne Perring**  
(OAR, NOAA Cooperative  
Institute for Research in  
Environmental Sciences)



**Dr. Corey Potvin**  
(OAR, National Severe  
Storms Laboratory)

# In the Spotlight



**Dr. Daniel T.  
Lindsey (NESDIS)**



**NOAA**

**FISHERIES SERVICE**  
Northeast Fisheries Science Center  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

**Northeast Fisheries Science Center  
(NMFS)**

# The Crowd & The Cloud

---

Questions?

